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ABSTRACT

North Carolina began administering its End-of-Course (EOC) tests to high school students in the 1985-1986 school year with the first administration of the Algebra test. Other tests have been added over the years, and the program now includes 10 multiple choice EOC tests aligned with the state's Standard Course of Study in each subject and one writing test. This report presents information about the EOC test results for students in the Wake County Public School System (WCPSS). EOC test scores in the WCPSS in the 2000-2001 school year showed generally positive results when compared to the 1999-2000 school year data. WCPSS students showed gains in seven subject areas, and no change in three subject areas on the multiple choice tests. No multiple choice test showed a decline in average score. On the English writing test, 63.0% of WCPSS students showed proficiency in writing in 2001, up 4.9 percentage points from the 58.1% of 2000. (Contains 13 figures.) (SLD)

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MEASURING UP

August, 2001

E&R Report No. 01.34

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Wake County Public Schools

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MEASURING UP

WAKE COUNTY PUBLIC SCHOOLS EVALUATION AND RESEARCH DEPARTMENT

2000-2001 End-of-Course Multiple-Choice and English II Testing Results

August, 2001

Authors: Chuck Dulaney and Glenda Burch

End-of-Course (EOC) test scores in the Wake County Public School System (WCPSS) in 2000-2001 showed generally positive results when compared to 1999-2000 data. WCPSS students showed gains in seven subject areas and no change in three subject areas on the multiple-choice tests. No multiple-choice test showed a decline in average score. On the English II writing test, 63.0% of WCPSS students showed proficiency in writing in 2001, up 4.9 percentage points from 58.1% proficient in 2000.

Background

North Carolina began implementing End-of-Course (EOC) tests in the 1985-86 school year with the first administration of the Algebra I test. Other high school subject tests were added over time until the program included ten multiple-choice tests (Algebra I, Algebra II, Geometry, English, U.S. History, Economic/Legal/Political Systems [ELP], Biology, Chemistry, Physical Science, and Physics) and one writing test (English II). The 11 EOC tests are aligned with the Standard Course of Study in each of the areas tested.

The multiple-choice tests are scored using a standardized scale. Scale scores are grouped into four levels of proficiency with Levels 3 and 4 indicating sufficient mastery for success in a higher level course. The English II writing test is scored by two independent trained readers who use a 6-point focused holistic scoring method. Students who score 3 or above are considered to be proficient.

In 1995-96, under the ABCs plan, EOC testing was required statewide for all students enrolled in Algebra I, English I, Biology, ELP, U.S. History, and English II, with testing in the remaining courses optional for local school districts. These six courses are graduation requirements, and tests in these courses were revised to place a stronger emphasis on higher-order thinking skills. Beginning in 1998-99, all students statewide enrolled in five elective courses (Geometry, Algebra II, Chemistry, Physics, and Physical Science) were also required to take EOC tests.

The multiple-choice tests must be given during the last two weeks of the course. The writing test is administered during the second semester of English II.

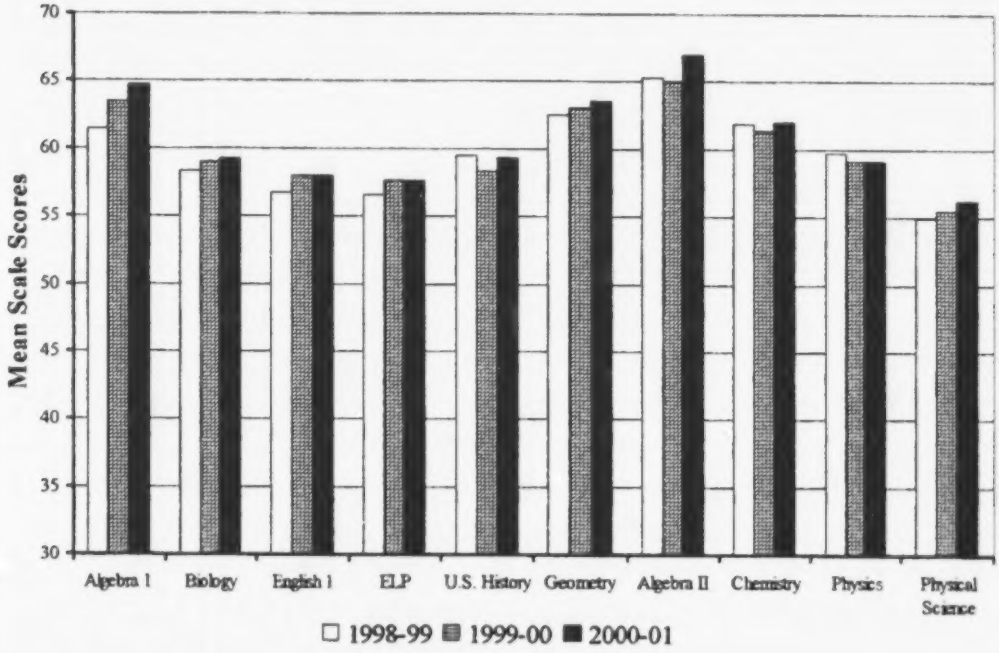
WCPSS Multiple-Choice Test Results

When compared to the prior year, the average scale scores for WCPSS students on Algebra I, Algebra II, Geometry, U.S. History, Biology, Chemistry, and Physical Science increased, with increases ranging from 0.2 to 2.0 scale score points. Algebra I and Algebra II increased by more than one point while other EOC tests averaged less than a one-point gain. See Figure 1 and Figure 2 for mean scale scores for the ten multiple-choice EOC tests in WCPSS for the past three years.

Figure 1: EOC Mean Scale Scores For WCPSS From 1999 To 2001

Course	1998-1999	1999-2000	2000-2001
Algebra I	61.4	63.4	64.7
Algebra II	65.3	65.0	67.0
Geometry	62.5	63.0	63.7
English I	56.7	58.0	58.0
Economic/Legal/Political Systems	56.5	57.6	57.6
U.S. History	59.5	58.3	59.2
Biology	58.3	59.0	59.2
Chemistry	61.8	61.3	62.0
Physics	59.7	59.1	59.1
Physical Science	54.9	55.4	56.2

Figure 2: EOC Multiple-Choice Mean Scale Scores for WCPSS From 1999 To 2001



Achievement Level Scores

The achievement level score categorizes student achievement according to four broad levels, defined by the North Carolina Department of Public Instruction (NCDPI) as follows:

Level I: Students performing at this level do not have sufficient mastery of knowledge and skills of the course to be successful at a more advanced level in the content area.

Level II: Students performing at this level demonstrate inconsistent mastery of knowledge and skills of the course, and are minimally prepared to be successful at a more advanced level in the content area.

Level III: Students performing at this level consistently demonstrate mastery of the course subject matter and skills and are well prepared for a more advanced level in the content area.

Level IV: Students performing at this level consistently perform in a superior manner clearly beyond that required to be proficient in the course subject matter and skills and are very well prepared for a more advanced level in the content area.

Both multiple-choice tests and the English II writing test have level scores. Scale score ranges for levels for each multiple-choice EOC test can be found in *Understanding End-of-Course Testing: Achievement Levels*, Assessment Brief Volume 5 No. 5. Holistic score ranges for levels for each multiple-choice EOC test can be found in *North Carolina End-of-Course Test of English II*, Assessment Brief Volume 6 No. 7. Both Assessment Briefs are published by the North Carolina Division of Accountability Services in the Department of Public Instruction and are available at the DPI website at www.ncpublicschools.org.

As shown in Figure 3, the percentage of students scoring at Levels III and IV on EOC tests reached new three-year highs in seven of the eleven tested courses in 2000-2001. Only in Economic/Legal/Political Systems did the percentage of students scoring in the proficient range decline from the previous year.

Figure 3: Percentage of Students Scoring At Level III or IV On WCPSS EOC Tests From 1999-2001

Course	1998-1999	1999-2000	2000-2001
Algebra I	78.3	81.5	88.0
Algebra II	77.3	75.6	82.4
Geometry	74.0	74.8	80.0
English I	74.2	78.6	79.1
English II	69.1	58.1	63.0
Economic/Legal/Political Systems	73.6	78.4	78.1
U.S. History	66.7	60.2	64.0
Biology	68.4	70.4	70.6
Chemistry	77.7	74.6	78.0
Physics	81.9	79.3	81.8
Physical Science	59.1	62.5	66.1

Results By Race and Gender

Disaggregated data by race and gender for all ten multiple-choice tests for the past two years are shown in Figures 4 and 5. Figures 6-10 show disaggregated data by race for the five End-of-Course tests required by the state for the last three years.

As shown in Figures 4 and 5, females tend to score higher than males on the EOC test in English I, while males tend to score higher on EOC tests in ELP, U.S. History, Geometry, Algebra II, Chemistry, Physics, and Physical Science. Algebra I and Biology scores show little difference by gender. Average scores for white students are substantially higher than average scores for black students on all ten tests.

Figures 6-10 show the percentage of students by race who scored at Level III or IV on the five EOC courses required for graduation. The following patterns can be seen:

- Gaps between white and black students remain relatively constant over time, with a slight decrease in the size of the gap in Algebra I, English I, and ELP in the last three years.
- Black students showed higher percentages on all five tests from 1999-2000 to 2000-2001.
- Algebra I percentages show a steady pattern of improvement over three years.
- After a rise for all groups in ELP and English I percentages in 1999-2000, scores rose for two groups and dropped for two groups in 2000-2001.
- Biology percentages rose for all four groups in 1999-2000, and rose for three groups in 2000-2001.
- U.S. History percentages rose for three groups in 2000-2001.
- The percentage of Hispanic and Asian students students at Level 3 or 4 dropped in 2001 in U.S. History, English I, and ELP.

WCPSS English II Test Results

The percentage of English II scores of 3.0 or higher (Level 3 or Level 4) for WCPSS students rose to 63.0% in 2000-2001. This is higher than the 58.1% in 1999-2000, but is lower than the 69.1% achieved in 1999. Only 4.9% of student scored in Level 1, down from 9.0% in 2000.

The percentage of WCPSS high school students showing proficiency in 2000-2001 ranged from 77.6% at Green Hope to 12.7% at Phillips. Eleven of the 16 high schools had higher percentages in Level 3 or 4 than they had the previous year. Refer to Figure 11 for percentages by school for the past four years.

Figure 4

High School End-of-Course Scale Scores 2000-2001

	Algebra 1	Biology	English 1	ELP	US History	Geometry	Algebra 2	Chemistry	Physics	Physical Science
All Students	61.7	59.2	58.0	57.6	59.2	63.5	67.0	62.0	59.1	56.2
Male	62.1	59.5	57.4	58.1	60.1	63.9	67.8	62.7	60.3	57.1
Female	61.4	58.8	58.7	57.0	58.4	63.0	66.2	61.4	57.6	55.3
White	63.7	61.6	60.5	59.9	61.2	65.0	68.2	62.9	59.9	58.8
Black	57.3	52.7	52.3	51.7	53.5	56.8	59.9	56.4	51.9	51.8
Asian	63.6	61.2	60.4	58.4	60.3	65.8	72.3	65.1	61.6	58.7
Hispanic	59.5	53.9	51.5	53.1	55.5	58.8	64.6	58.9	57.7	50.7
LEP	60.3	51.0	46.0	49.9	52.9	62.7	66.3	60.4	59.3	49.8
Spec. Ed.	59.4	52.4	49.9	50.5	53.5	59.0	62.2	58.1	56.8	51.8

Figure 5

High School End-of-Course Scale Scores 1999-2000

	Algebra 1	Biology	English 1	ELP	US History	Geometry	Algebra 2	Chemistry	Physics	Physical Science
All Students	60.1	59.0	58.0	57.7	58.3	62.6	65.0	61.3	59.1	55.4
Male	59.9	59.1	57.1	58.3	59.0	63.3	65.6	62.1	60.3	56.3
Female	60.3	58.8	59.0	57.0	57.7	62.0	64.5	60.6	57.5	54.3
White	61.9	61.2	60.4	59.8	60.1	64.2	66.4	62.1	59.8	58.3
Black	55.4	52.1	51.7	51.3	52.7	55.3	57.7	55.8	51.8	50.6
Asian	63.3	61.8	61.4	59.8	60.2	66.2	71.2	64.8	59.3	55.5
Hispanic	58.2	53.5	53.3	54.1	57.4	61.1	63.1	60.6	57.5	52.0
LEP	61.4	50.4	47.8	49.3	49.4	59.7	65.9	59.9	56.6	49.6
Spec. Ed.	56.3	51.8	49.7	51.5	52.4	57.7	60.6	57.4	54.2	51.4

Note: Figures 4-10 show disaggregated scores for high school students. Middle school Algebra I and Geometry scores have been removed.
LEP shows average scores for students with Limited English Proficiency.
Spec. Ed. shows average scores for all students receiving special education services (not Academically Gifted).

Figure 6
Algebra I – 1999-2001
Percent At/Above Grade Level by Race

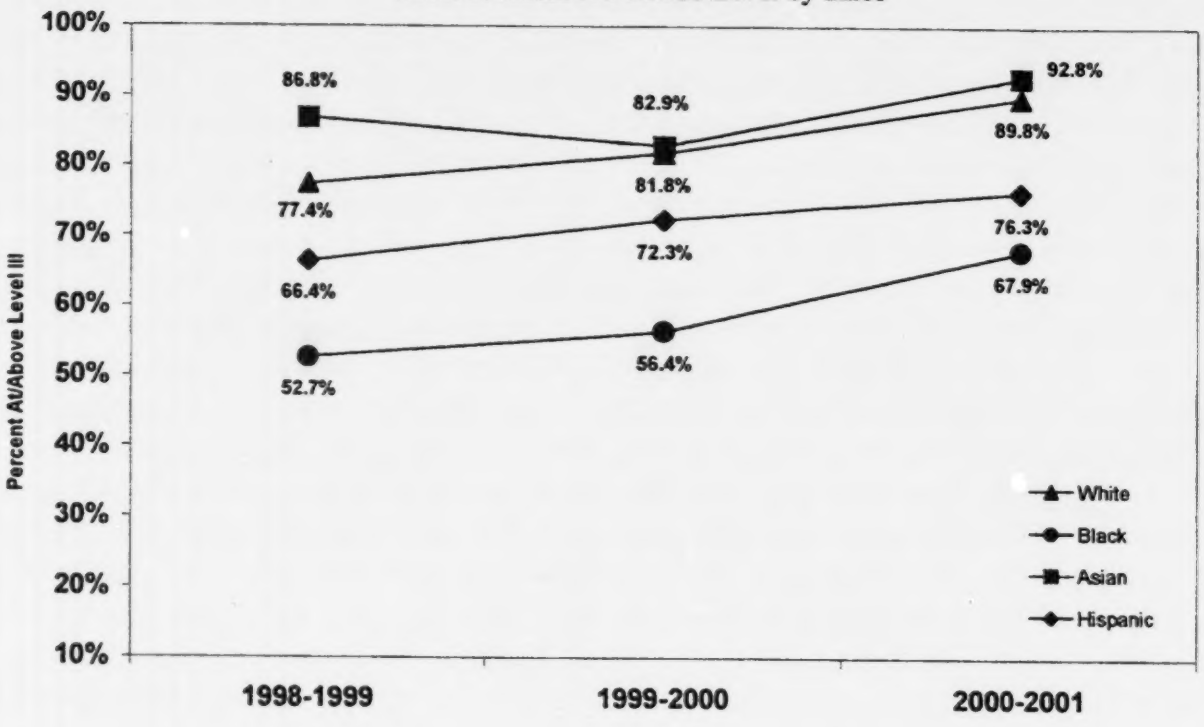


Figure 7
Biology - 1999-2001
Percent At/Above Grade Level by Race

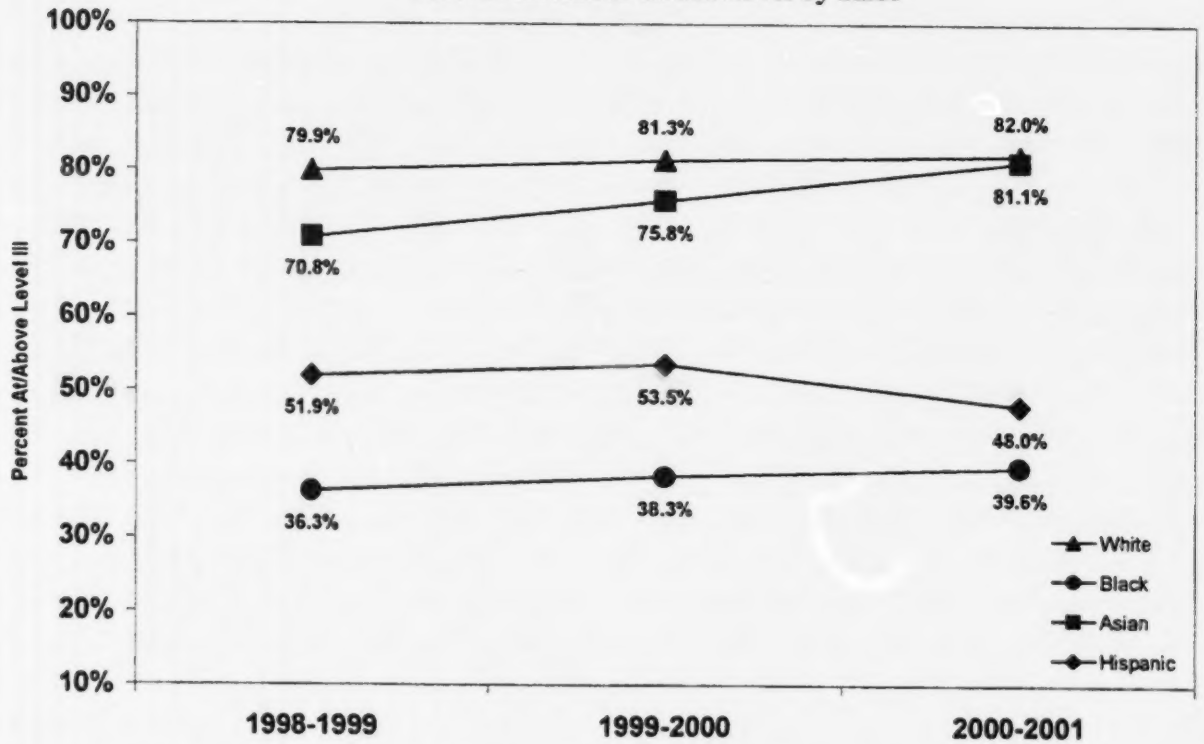


Figure 8
Economic/Legal/Political Systems - 1999-2001
Percent At/Above Grade Level by Race

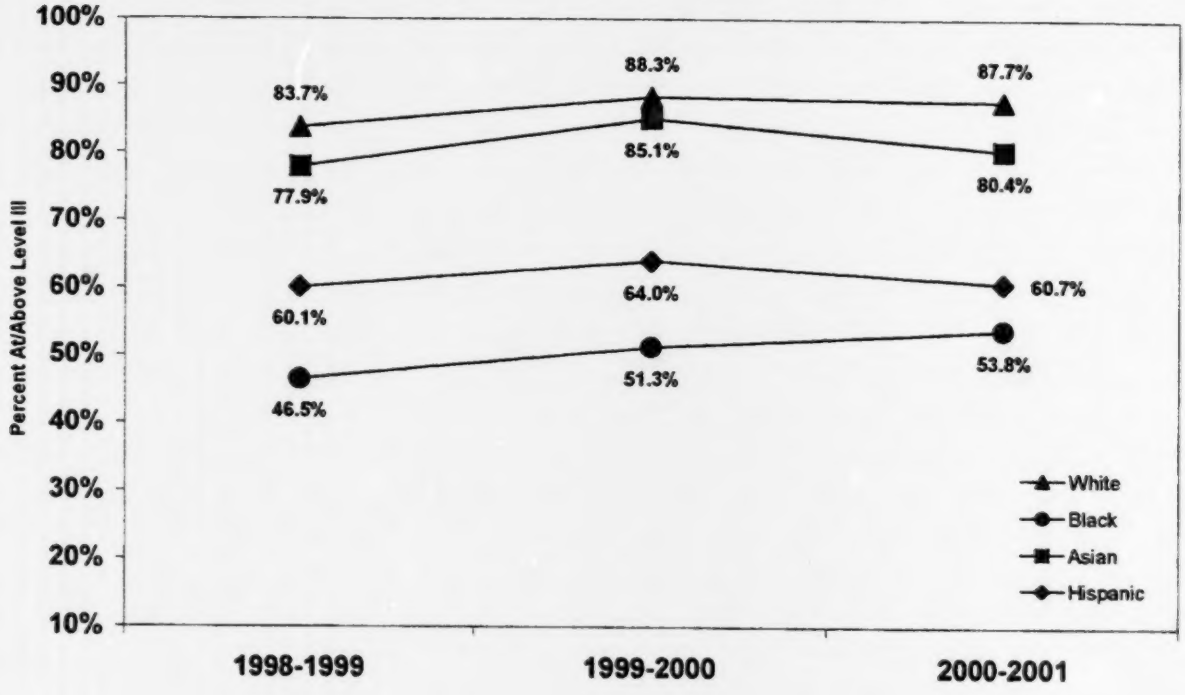


Figure 9
English I - 1999-2001
Percent At/Above Grade Level by Race

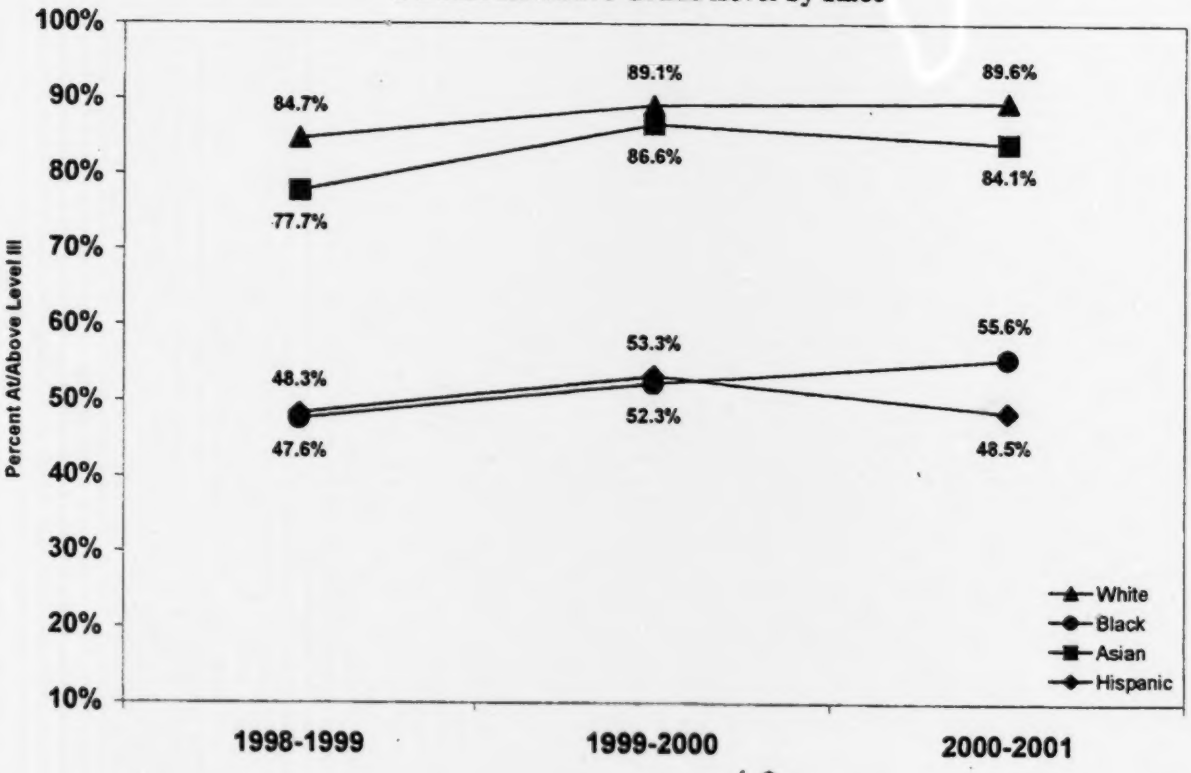


Figure 10
U.S. History - 1999-2001
Percent At/Above Grade Level by Race

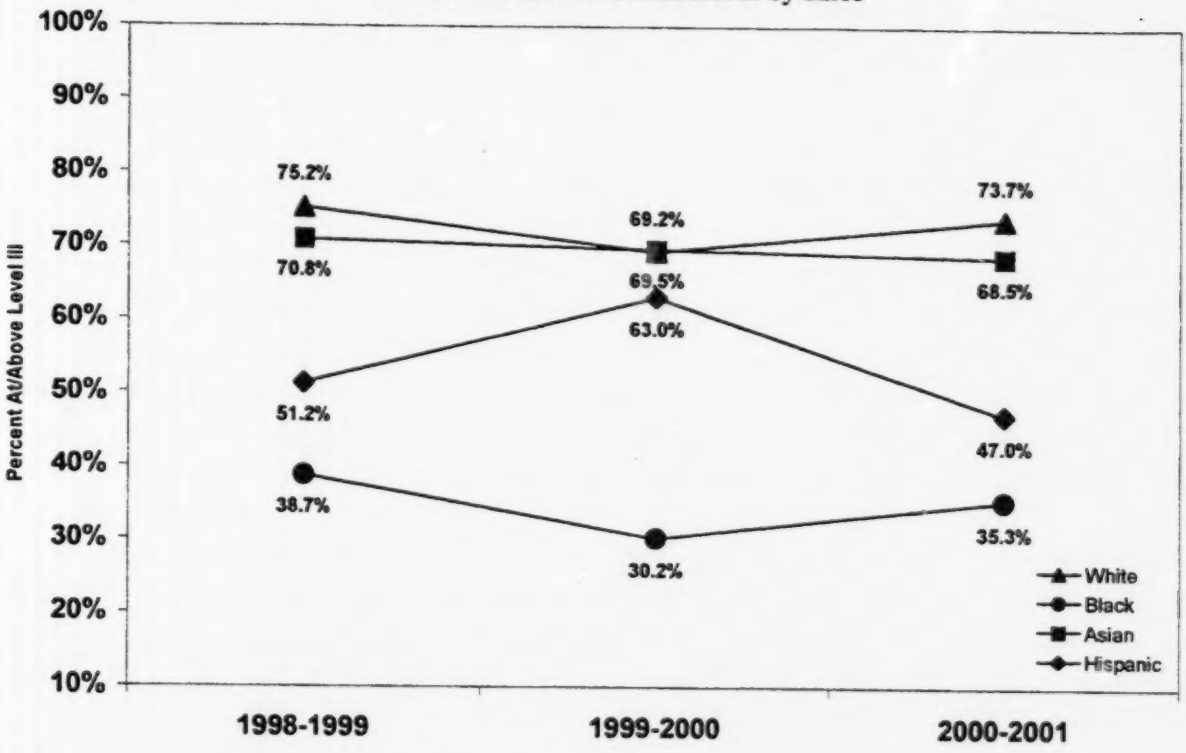


Figure 11: English II Test Results 1998-2001
Number and Percentage of Students By Level

		Percentage of Students in:				*Number of Students in:*			
		Level 1	*Level 2*	*Level 3*	*Level 4*	*Level 1*	*Level 2*	*Level 3*	*Level 4*
WCPSS	***2001***	4.9%	32.0%	48.2%	14.8%	316	2052	3088	950
920	***2000***	9.0%	32.9%	44.8%	13.4%	536	1959	2667	796
	1999	6.3%	24.6%	44.9%	24.2%	363	1419	2585	1393
	1998	8.4%	38.5%	39.3%	13.8%	459	2109	2155	757
Apex	***2001***	7.3%	38.0%	44.2%	10.5%	33	173	201	48
316	***2000***	7.5%	30.2%	44.6%	17.7%	34	136	201	80
	1999	8.7%	27.9%	44.6%	18.8%	46	147	235	99
	1998	5.2%	40.1%	42.1%	12.5%	28	214	225	67
Athens Drive	***2001***	3.9%	29.9%	46.6%	19.5%	18	138	215	90
318	***2000***	11.6%	25.9%	42.2%	20.3%	49	110	179	86
	1999	4.6%	16.7%	47.0%	31.7%	17	61	172	116
	1998	7.8%	36.7%	42.1%	13.4%	32	150	172	55
Broughton	***2001***	4.9%	29.2%	48.6%	17.3%	18	108	180	64
348	***2000***	8.2%	30.3%	50.0%	11.4%	31	114	188	43
	1999	10.0%	29.7%	42.7%	17.6%	37	110	158	65
	1998	8.8%	30.7%	43.5%	17.1%	33	115	163	64
Cary	***2001***	3.5%	29.6%	47.7%	19.1%	13	110	177	71
368	***2000***	12.4%	36.6%	41.2%	9.8%	43	127	143	34
	1999	5.6%	21.9%	48.9%	23.6%	26	102	228	110
	1998	6.4%	38.3%	40.4%	14.9%	30	180	190	70
East Wake	***2001***	5.3%	31.9%	50.5%	12.3%	22	132	209	51
411	***2000***	17.0%	43.7%	32.6%	6.7%	69	177	132	27
	1999	6.8%	31.7%	51.9%	9.6%	26	122	200	37
	1998	6.2%	52.5%	34.7%	6.5%	22	186	123	23
Enloe	***2001***	3.4%	26.9%	40.9%	28.8%	20	159	242	170
412	***2000***	7.9%	22.9%	45.8%	23.4%	43	124	248	127
	1999	6.2%	16.7%	33.2%	43.9%	35	94	187	247
	1998	4.1%	20.8%	43.8%	31.3%	22	111	234	167
Fuquay-Varina	***2001***	9.7%	44.4%	41.1%	4.7%	39	178	165	19
428	***2000***	7.9%	43.3%	46.3%	2.5%	28	154	165	9
	1999	5.2%	32.6%	45.3%	16.9%	20	125	174	65
	1998	9.1%	31.6%	48.4%	10.9%	31	107	164	37
Garner	***2001***	6.6%	41.4%	47.2%	4.8%	33	206	235	24
436	***2000***	5.9%	51.7%	38.7%	3.6%	26	227	170	16
	1999	3.9%	24.5%	53.5%	18.1%	17	107	234	79
	1998	7.2%	47.9%	35.4%	9.6%	27	180	133	36

Figure 11: English II Test Results 1998-2001
Number and Percentage of Students By Level

		Percentage of Students in:				*Number of Students in:*			
		Level 1	*Level 2*	*Level 3*	*Level 4*	*Level 1*	*Level 2*	*Level 3*	*Level 4*
Green Hope	***2001***	0.9%	21.5%	58.2%	19.4%	4	101	273	91
441	***2000***	6.6%	35.1%	47.3%	11.0%	21	112	151	35
	1999								
	1998								
Leesville Rd.	***2001***	1.9%	22.6%	52.4%	23.2%	9	109	253	112
473	***2000***	7.3%	29.8%	48.2%	14.7%	35	142	230	70
	1999	3.5%	21.8%	40.2%	34.6%	18	113	208	179
	1998	7.9%	34.0%	37.1%	21.0%	40	173	189	107
Millbrook	***2001***	6.2%	32.2%	52.7%	8.9%	31	160	262	44
500	***2000***	14.8%	35.6%	42.5%	7.1%	65	156	186	31
	1999	6.0%	22.8%	54.4%	16.8%	22	83	198	61
	1998	9.7%	44.4%	33.8%	12.2%	43	197	150	54
Sanderson	***2001***	3.9%	24.6%	51.9%	19.6%	14	89	188	71
552	***2000***	8.3%	27.8%	46.0%	17.9%	31	104	172	67
	1999	5.0%	20.7%	49.3%	25.1%	18	75	179	91
	1998	7.1%	33.5%	47.4%	12.0%	30	142	201	51
Southeast Raleigh	***2001***	6.8%	42.0%	43.6%	7.5%	29	178	185	32
562	***2000***	4.9%	21.9%	52.8%	20.4%	25	111	267	103
	1999	7.3%	24.9%	42.7%	25.1%	43	147	252	148
	1998	17.4%	39.6%	38.9%	4.2%	46	105	103	11
Wake Forest-Rolesville	***2001***	1.3%	26.2%	61.2%	11.4%	3	62	145	27
588	***2000***	7.3%	34.9%	44.9%	13.0%	22	105	135	39
	1999	4.0%	28.9%	41.4%	25.7%	15	108	155	96
	1998	14.1%	55.7%	26.6%	3.5%	52	205	98	13
Wakefield	***2001***	3.3%	35.4%	49.3%	11.9%	10	107	149	36
595	***2000***	4.8%	16.6%	58.6%	20.0%	7	24	85	29
	1999								
	1998								
Longview School	***2001***	62.5%	25.0%	12.5%	0.0%	5	2	1	0
324	***2000***	100.0%	0.0%	0.0%	0.0%	3	0	0	0
	1999	50.0%	50.0%	0.0%	0.0%	1	1	0	0
	1998								
Mary E. Phillips	***2001***	23.8%	63.5%	12.7%	0.0%	15	40	8	0
528	***2000***	7.3%	65.5%	27.3%	0.0%	4	36	15	0
	1999	43.1%	47.1%	9.8%	0.0%	22	24	5	0
	1998	29.1%	55.7%	12.7%	2.5%	23	44	10	2

Figure 12: End-of-Course Mean Scale Scores for Five Required Courses 1999-2001

	English I			Algebra I			Biology			ELP			US History		
School	1998-99	1999-00	2000-01	1998-99	1999-00	2000-01	1998-99	1999-00	2000-01	1998-99	1999-00	2000-01	1998-99	1999-00	2000-01
Apex	58.5	58.8	58.4	61.4	62.3	63.9	58.4	58.8	58.5	57.6	58.5	58.2	60.4	59.3	60.9
Athens Drive	56.9	58.0	56.9	62.3	63.0	62.0	58.1	59.8	60.2	56.8	57.2	57.4	59.6	57.8	58.9
Broughton	57.4	58.4	58.7	55.0	56.1	58.2	56.8	57.0	58.3	56.5	56.8	57.6	59.3	57.5	58.4
Cary	58.0	57.5	58.4	62.0	63.4	64.2	57.7	57.6	59.2	58.0	59.0	58.1	60.5	59.5	60.2
East Wake	53.0	55.7	55.4	58.6	60.7	61.9	53.9	55.5	56.8	51.9	52.9	57.5	55.8	55.1	55.8
Enloe	59.2	60.0	59.8	55.0	55.3	57.4	60.5	61.0	61.5	58.7	58.5	58.4	62.3	61.1	62.1
Fuquay-Varina	54.2	55.6	57.2	57.9	61.0	62.2	56.4	55.1	57.0	54.1	56.4	57.1	58.2	58.4	57.1
Garner	54.3	56.0	54.6	57.7	58.5	59.5	58.0	59.1	57.4	53.7	54.5	52.7	58.7	55.6	57.8
Green Hope		61.8	60.8		63.0	66.3		62.0	60.8		58.8	58.7			61.8
Leesville Rd.	58.4	59.3	59.4	61.2	63.4	64.7	60.9	62.4	62.5	57.9	58.9	59.8	61.2	60.6	61.8
Mary E. Phillips	48.6	52.4	52.1	50.9	47.4	54.2	49.9	50.0	51.3	51.1	55.3	52.6	48.5	49.8	48.6
Millbrook	55.8	57.6	56.6	56.0	57.2	59.0	58.6	59.9	60.3	54.7	57.5	55.5	59.7	58.0	58.3
Sanderson	56.8	58.5	58.5	57.6	60.5	60.2	57.5	60.2	59.0	57.0	57.4	57.7	59.3	58.2	59.8
Southeast Raleigh	57.6	56.8	58.2	57.8	58.3	61.8	62.4	58.0	56.8	59.0	60.0	58.3	57.0	57.8	58.2
Wake Forest-Rolesville	56.0	57.5	58.2	57.5	59.5	62.1	57.7	58.2	56.8	56.4	57.0	57.9	59.8	59.1	59.3
Wakefield			60.1			63.1			60.9			60.2			59.6
WCPSS	56.7	58.0	58.0	61.4	63.4	64.7	58.3	59.0	59.2	56.5	57.6	57.6	59.5	58.3	59.2

Figure 13: End-of-Course Mean Scale Scores for Five Elective Courses 1999-2001

	Algebra 2			Chemistry			Geometry			Physical Science			Physics		
School	1998-99	1999-00	2000-01	1998-99	1999-00	2000-01	1998-99	1999-00	2000-01	1998-99	1999-00	2000-01	1998-99	1999-00	2000-01
Apex	69.5	67.7	69.8	62.3	60.9	62.3	66.3	65.9	66.1	58.2	57.4	59.8	63.1	60.7	60.3
Athens Drive	67.0	68.5	68.1	64.2	64.1	64.6	63.8	63.6	63.5	53.9	53.8	53.5	62.1	58.3	60.2
Broughton	62.3	63.5	63.5	60.6	59.7	59.8	62.4	65.1	64.4	55.4	54.7	54.5	61.1	60.0	58.2
Cary	66.8	66.7	68.3	60.7	60.0	62.1	63.6	64.1	65.7	58.3	56.9	57.5	56.1	57.3	56.7
East Wake	62.0	61.7	60.9	55.9	58.4	55.4	62.3	62.3	62.6	51.2	49.2	51.6	53.9	54.8	51.6
Enloe	65.2	63.3	66.2	63.2	61.9	62.3	61.7	61.8	61.9	50.7	50.7	51.2	61.0	58.3	60.2
Fuquay-Varina	59.5	61.4	63.5	59.0	60.4	60.2	58.3	59.6	61.0	54.1	54.5	54.0	57.3	58.5	55.9
Garner	62.8	62.6	63.8	61.9	59.0	60.7	58.2	57.7	59.7	53.6	54.5	51.1	59.8	56.5	54.5
Green Hope		74.0	71.2		66.5	63.8		69.1	67.1		59.1	57.4			59.1
Leesville Rd.	67.2	67.3	70.2	65.2	63.2	64.3	63.9	63.2	64.7	58.5	58.8	58.6	62.3	62.1	61.4
Mary E. Phillips	50.1	51.7	54.2				49.6	53.2	58.5	49.4	54.2	51.3			46.5
Millbrook	63.5	64.2	68.0	61.8	63.3	64.6	60.1	61.5	61.8	56.5	57.4	55.6	58.9	59.2	58.4
Sanderson	66.2	66.1	69.1	64.1	62.3	64.5	63.4	64.3	63.8	55.3	55.7	56.8	54.6	57.6	60.6
Southeast Raleigh	68.2	65.9	66.6	62.2	62.3	61.0	61.3	59.4	59.6	49.0	54.9	56.8	59.5	59.9	60.0
Wake Forest-Rolesville	62.9	60.8	62.9	56.1	57.2	58.4	62.3	60.2	61.4	53.7	52.3	53.2	58.1	57.5	57.8
Wakefield			71.8			60.0			66.5			59.7			59.6
WCPSS	65.3	65.0	67.0	61.8	61.3	62.0	62.5	63.0	63.7	54.9	55.4	56.2	59.7	59.1	59.1

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